

Model 333 Shown
(Rails and shaft Protector sold separately)

FEATURES

- Triplex Uniflow design provides a smooth, low-pulsation flow with strong suction capabilities.
- Hard chrome-plated 304S cylinders and sleeves provide long life with mild liquids within a range of 5-9 PH.
- Optional 316 Stainless Steel manifolds for added strength and corrosion resistance.
- Optional FPM and PTFE elastomers for liquid compatibility.

COMMON SPECIFICATIONS

Stroke.....	0.768"	(19.5 mm)
Crankcase Capacity.....	21 oz.	(0.6 l)
Maximum Liquid Temperature	160°	(71°C)
Above 130°F call CAT PUMPS for inlet conditions and elastomer recommendations.		
Inlet Pressure Range.....	-8.5 to +40 psi	(-0.6 to +2.8 bar)
Inlet Ports (1).....	1/2" NPTF	(1/2" NPTF)
Auxiliary Port (1)	1/4" NPTF	(1/4" NPTF)
Discharge Ports (2).....	3/8" NPTF	(3/8" NPTF)
(1)	1/2" NPTF	(1/2" NPTF)
Pulley Mounting	Either Side	(Either Side)
Shaft Diameter	0.650"	(16.5 mm)
Weight.....	17.7 lbs.	(8.0 kg)
Dimensions.....	12.56 x 8.80 x 5.33" (319 x 223 x 135.5mm)	

⚠ CAUTIONS AND WARNINGS

All High Pressure Systems require a primary pressure regulating device (i.e. regulator, unloader) and a secondary pressure relief device (i.e. pop-off valve, relief valve). Failure to install such relief devices could result in personal injury or damage to pump or property. CAT PUMPS does not assume any liability or responsibility for the operation of a customer's high pressure system.

Read all CAUTIONS and WARNINGS before commencing service or operation of any high pressure system. The CAUTIONS and WARNINGS are included in each service manual and with each Accessory Data sheet. CAUTIONS and WARNINGS can also be viewed online at www.catpumps.com/cautions-warnings or can be requested directly from CAT PUMPS.

WARRANTY

View the Limited Warranty on-line at www.catpumps.com/warranty.

4 Frame Piston Pump

**Standard Brass
Models**

333,430

**Stainless Steel
Models**

331,431

**Pulse Pump
Models**

335,435

SPECIFICATIONS

U.S. Measure

Metric Measure

MODEL 333, 331, 335

Flow.....	4.0 gpm	(15 lpm)
Pressure Range.....	100 to 1200 psi	(7 to 85 bar)
RPM.....	1070 rpm	(1070 rpm)
Bore	0.709"	(18 mm)

MODEL 430, 431, 435

Flow.....	5.0 gpm	(19 lpm)
Pressure Range.....	100 to 1000 psi	(7 to 70 bar)
RPM.....	1040 rpm	(1040 rpm)
Bore	0.787"	(20 mm)

ELECTRIC HORSEPOWER REQUIREMENTS

MODEL	FLOW		PRESSURE			MOTOR PULLEY SIZE	
			psi 800	psi 1000	psi 1200	Using 1725 rpm Motor & Std. 8" Pump Pulley O.D.	
	U.S. gpm	lpm	bar 55	bar 70	bar 85	rpm	Pulley O.D.
333,331,335	4.0	15	2.2	2.7	3.3	1070	5.0
	3.0	11.4	1.6	2.1	2.5	803	3.8
	2.0	7.6	1.1	1.4	1.6	535	2.5
430,431,435	5.0	19	2.7	3.4	N/A	1040	5.1
	4.0	15	2.2	2.7	N/A	832	4.1
	3.0	11.4	1.6	2.1	N/A	624	3.1

**DETERMINING
THE PUMP R.P.M.**

Rated gpm

=

"Desired" gpm

Rated rpm

"Desired" rpm

**DETERMINING
THE REQUIRED H.P.**

gpm x psi

=

Electric Brake

1460

H. P. Required

**DETERMINING
MOTOR PULLEY SIZE**

Motor Pulley O.D.

=

Pump Pulley O.D.

Pump rpm

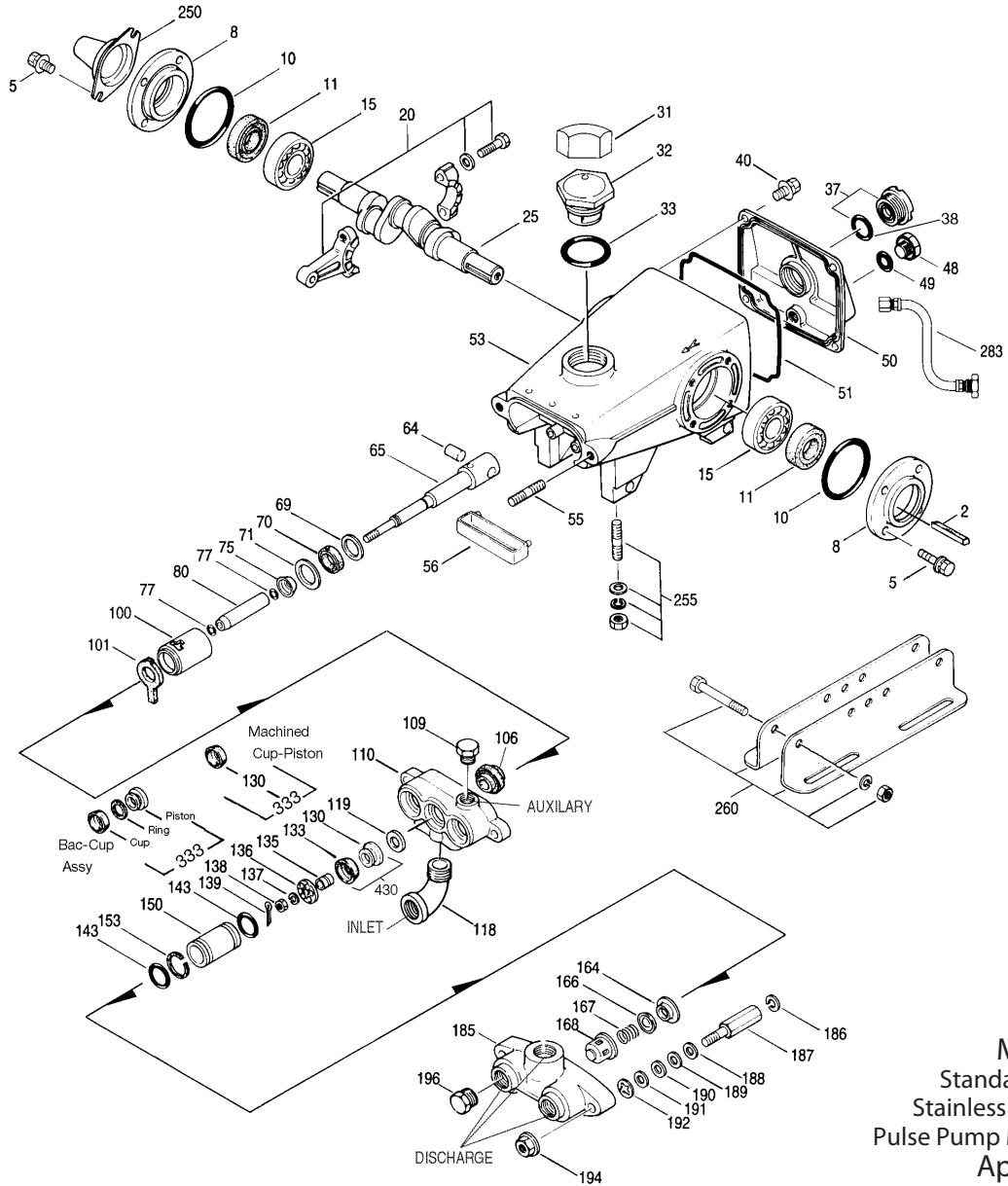
Motor rpm

See complete Drive Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 003.
Refer to pump **Service Manual** for repair procedure and additional technical information.

PARTS LIST

ITEM	PART NUMBER		DESCRIPTION		QTY	
	333	MATL	430	MATL		
2	30047	STL	30047	STL	Key (M5x5x24)	1
5	92519	STZP	92519	STZP	Screw, HHC, Sems (M6x16)	8
8	125824	STCP R	125824	STCP R	Screw, HHC, Sems (M6x16)	8
10	27950	AL	27950	AL	Cover, Bearing	2
11	26536	NBR	26536	NBR	O-Ring, Bearing Cover - 70D	2
15	24159	NBR	24159	NBR	Seal, Oil	2
20	14487	STL R	14487	STL R	Bearing, Ball	2
25	48734	TNM	48734	TNM	Rod, Connecting [3/02]	3
31	43163	FCM	43163	FCM	Crankshaft, Dual End, Tapped (M8x1.25)	1
32	828710	—	828710	—	Protector, Oil Cap w/Foam Gasket	1
33	43211	ABS	43211	ABS	Cap, Oil Filler	1
37	14177	NBR	14177	NBR	O-Ring, Oil Filler Cap - 70D	1
38	92241	—	92241	—	Gauge, Oil Bubble w/Gasket - 80D	1
40	44428	NBR	44428	NBR	Gasket, Flat, Oil Gauge - 80D	1
48	92520	STZP	92520	STZP	Screw, HHC, Sems (M6x20)	4
49	126541	STCP R	126541	STCP R	Screw, HHC, Sems (M6x20)	4
50	25625	STCP	25625	STCP	Plug, Drain (1/4"x19 BSP)	1
51	23170	NBR	23170	NBR	O-Ring, Drain Plug - 70D	1
53	48772	AL	48772	AL	Cover, Rear [10/04]	1
55	48773	NBR	48773	NBR	O-Ring, Rear Cover [10/04]	1
56	76953	AL	76953	AL	Crankcase [10/04]	1
64	126546	STCP R	126546	STCP R	Stud (M8x41.4)	2
65	27712	POP	27712	POP	Pan, Oil (use with Blue-Dot Seals and Wick)	1
69	16948	CM	16948	CM	Pin, Crosshead	3
70	27981	SZZ	27981	SZZ	Rod, Piston, Stepped	3
71	126259	STCP R	126259	STCP R	Washer, Oil Seal	3
75	25301	NBR	25301	NBR	Seal, Oil, Crankcase - 80D	3
77	126189	STCP R	126189	STCP R	Washer, Oil Seal	3
80	25327	S	25327	S	Slinger, Barrier	3
100	25392	NBR	25392	NBR	O-Ring, Sleeve - 70D	6
101	28771	FPM	28771	FPM	O-Ring, Sleeve	6
106	28772	PTFE	28772	PTFE	O-Ring, Sleeve	6
109	25299	SCP	25299	SCP	Sleeve	3
110	28460	S	28460	S	Sleeve	3
118	27710	PVDF	27710	PVDF	Retainer, Seal	3
119	27711	—	27711	—	Wick, Long Tab (use with Blue-Dot Seals and Oil Pan)	3
133	30315	NBR	30315	NBR	Seal, LPS, Prrrrrm-A-Lube - 80D	3
133	30325	FPM	30325	FPM	Seal, LPS, Prrrrrm-A-Lube	3
133	25153	NBR	25153	NBR	Seal, LPS, Blue-Dot (use with Wick and Oil Pan)	3
136	22177	BBCP	22177	BBCP	Plug (1/4" NPT)	1
137	25128	BBCP	25128	BBCP	Manifold, Inlet	1
138	25635	SS	25635	SS	Manifold, Inlet (331, 431)	1
139	22160	BBCP	22160	BBCP	Elbow, Street (1/2" NPTM)	1
143	28339	S	27004	S	Valve, Inlet	3
150	—	—	22021	S	Piston	3
153	—	—	43172	FPM	Cup, Piston	3
153	28955	NBR	—	—	Cup-Piston, Machined w/304S	3
153	43826	FPM	—	—	Assy, Bac-Cup (Incls: 43784, 43719, 43717)	3
153	29088	SNG	29089	SNG	Cup-Piston, V-Hot	3
153	34019	TG	30145	TG	Cup-Piston, w/O-Ring (1000 PSI Max)	3
164	27983	S	27983	S	Spacer, Piston	3
166	27002	S	27002	S	Retainer, Piston	3
167	27006	S	27006	S	Washer, Conical (M6)	3
168	27000	S	27000	S	Nut, Slotted (M6)	3
185	14158	S	14158	S	Cotterpin (M1.6x10)	3
186	23172	NBR	23172	NBR	O-Ring, Cylinder - 70D	6
187	11377	FPM	11377	FPM	O-Ring, Cylinder - 80D	6
188	26961	PTFE	26961	PTFE	O-Ring, Cylinder	6
189	25660	SCP	24285	SCP	Cylinder	3
190	—	—	29044	S	Cylinder	3
191	21985	PTFE	—	—	Back-up-Ring, Cylinder	3
192	43434	S	43434	S	Seat, Quiet Valve	3
193	29487	S	29487	S	Seat, Flat Valve	3
194	43723	S	43723	S	Valve, Quiet Valve	3
195	22842	S	22842	S	Valve, Flat Valve	3
196	43360	S	43360	S	Spring, Quiet Valve	3
197	22031	S	22031	S	Spring, Flat Valve	3
198	43442	S	43442	S	Retainer, Spring, Quiet Valve	3
199	22841	S	22841	S	Retainer, Spring, Flat Valve	3
200	24459	BBCP	24459	BBCP	Manifold, Discharge	1
201	25634	SS	25634	SS	Manifold, Discharge (331, 431)	1
202	6400	BB	6400	BB	Manifold, Pulse Pump (335, 435)	1
203	6300	BBSS	6300	BBSS	Pump, Pulse (335, 435)	1
204	126232	STCP R	126232	STCP R	Lockwasher (M8)	2
205	126564	STCP R	126564	STCP R	Bolt, Cylinder (M8)	2
206	126591	STCP R	126591	STCP R	Washer, Shim (M13x8x2)	2/4
207	126813	STCP R	126813	STCP R	Washer, Shim (M13x8x1)	2/4
208	126576	STCP R	126576	STCP R	Washer, Shim (M13x8x.5)	2/4
209	126590	STCP R	126590	STCP R	Washer, Shim (M13x8x.3)	2/4
210	26676	S	26676	S	Lockwasher (M8)	2
211	126201	STCP R	126201	STCP R	Nut, Hex Flange (M8)	2
212	22187	BBCP	22187	BBCP	Plug (3/8" NPT)	1
213	25130	STCP	25130	STCP	Protector, Shaft	1
214	30243	STZP	30243	STZP	Kit, Direct Mount	1

EXPLODED VIEW



Models
 Standard - 333, 430
 Stainless Steel - 331, 431
 Pulse Pump Manifold - 335, 435
 April 2011

	333	MATL	430	MATL		
	331		431			
	335		435			
260	30611	STZP	30611	STZP	Assy, Rail Mount	1
265	30652	—	30652	—	Assy, Mount (Incls: 30611, 30048, 30047, 25130)	1
270	30244	STL	30244	STL	Assy, Pulley (Incls: 30048, 30047)	1
283	34334	—	34334	—	Kit, Oil Drain	1
300	30239	NBR	—	—	Kit, Mach Cup (Incls: 133,139,143,153)	1
	—	—	30023	FPM	Kit, Cup (Incls: 133,139,143)	1
301	30841	FPM	—	—	Kit, Bac-Cup (Incls: 133,139,143,153)	1
302	30240	NBR	—	—	Kit, Piston (Incls: 119,133,135-139,143,153)	1
	—	—	30210	NBR	Kit, Piston (Incls: 119,130,133,135-139,143)	1
	30842	NBR	—	—	Kit, Bac-Cup Piston (Incls: 119,133,135-139,143,153)	1
304	—	—	30272	NBR	Kit, Hot Cup (Incls: 133, 139, 143)	1
305	30312	NBR	30312	NBR	Kit, Sleeve & Prrrrm-A-Lube Seal (Incls: 75,77,80,106,139)	1
	30230	NBR	30230	NBR	Kit, Sleeve & Blue-Dot Seal (Incls: 75,77,80,101,106,139)	1
306	30305	NBR	30305	NBR	Kit, Prrrrm-A-Lube Seal (Incls: 106,139)	1
	30229	NBR	30229	NBR	Kit, Blue-Dot Seal (Incls: 101,106,139)	1
310	30686	NBR	30686	NBR	Kit, Valve - Quiet Valve (Incls: 143,164,166,167,168)	1
	30024	NBR	30024	NBR	Kit, Valve - Flat Valve (Incls: 143,164,166,167,168)	1
—	6107	—	6107	—	Oil, Bottle (21 oz.) ISO 68 Hydraulic	1
					(Fill to specified crankcase capacity prior to start-up)	

Bold print part numbers are unique to a particular pump model. Italics are optional items.

[] Date of latest production change. R Components comply with RoHS Directive.

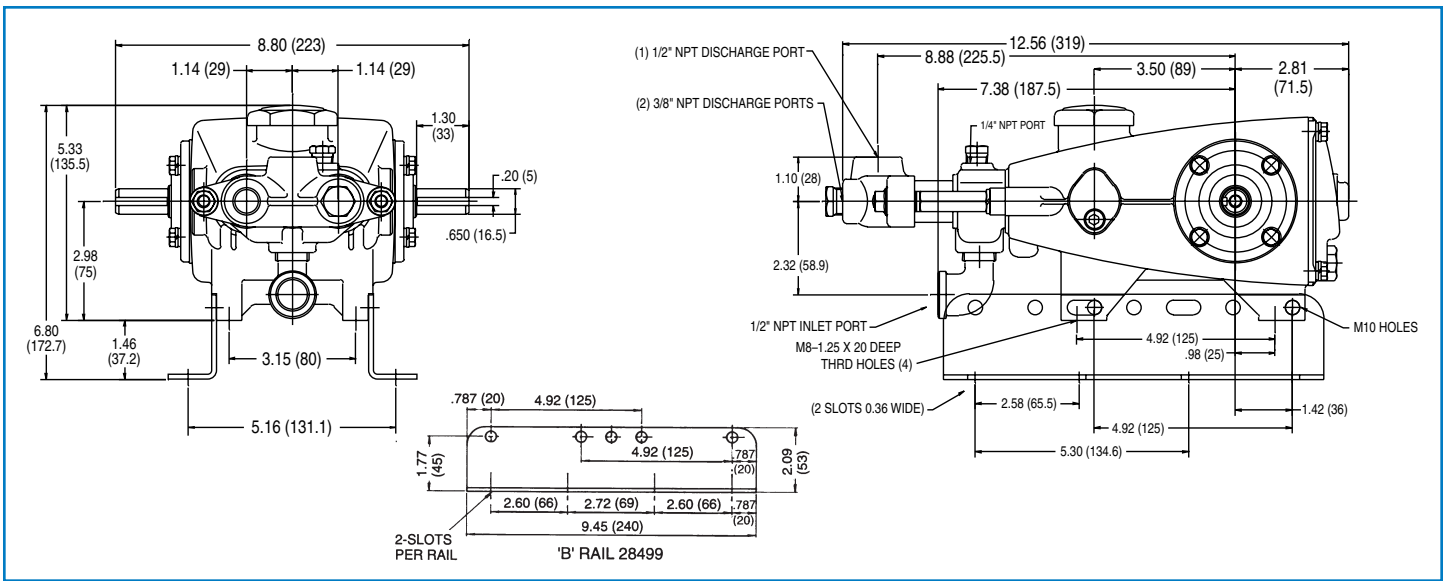
View Tech Bulletins 002, 016, 017, 020, 024, 025, 026, 030, 034, 036, 037, 038, 043, 074, 077, 083 and 090 for additional information.

MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic AL=Aluminum BB=Brass BBCP=Brass/Chrome Plated CM=Chrome-Moly

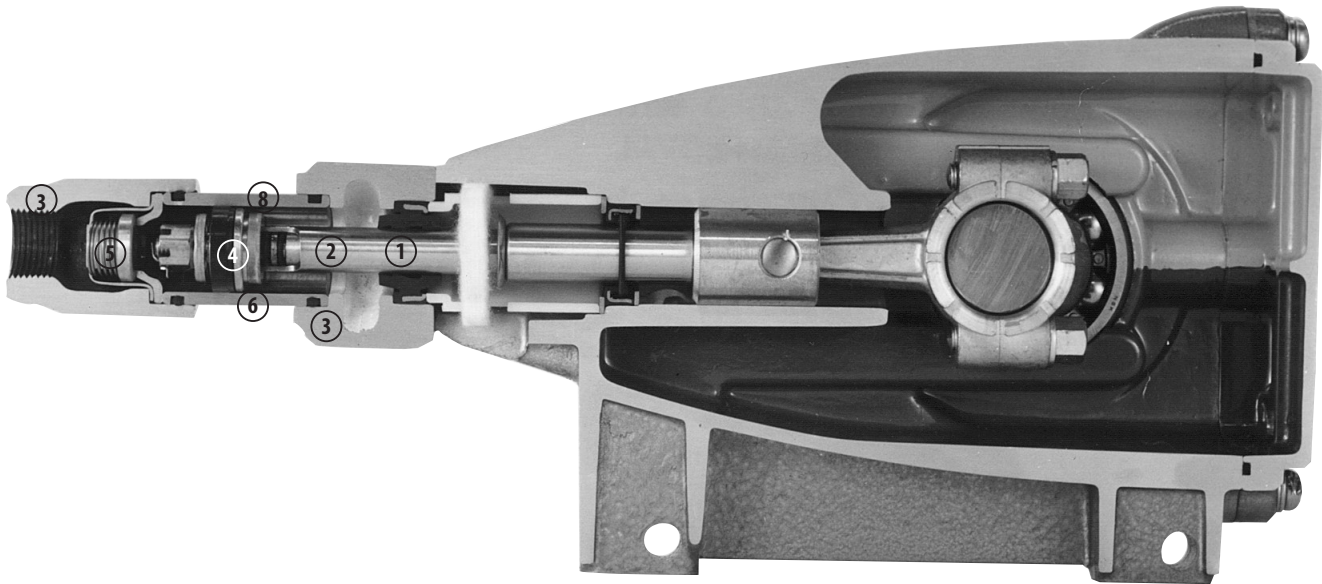
FCM=Forged Chrome-moly FPM=Fluorocarbon NBR=Medium Nitrile (Buna-N) POP=Polypropylene PTFE=Pure Polytetrafluoroethylene

PVDF=Polyvinylidene Fluoride S=304SS SCP=304SS/Chrome Plated SS=316SS SNG=Special Blend (Buna) STCP=Steel/Chrome Plated STL=Steel

STZP=Steel/Zinc Plated SZZ=304SS/Zamak TG=PTFE Graphite Compound (GIT) TNM=Special High Strength



Models 333, 331, 430, 431



- 1 The **patented stepped piston rod** with hard chrome-plated stainless steel sleeve provides a durable wear surface and easy wet-end servicing.
- 2 The **cylinder and sleeve** wear surfaces are hard chrome-plated 304 stainless steel for longer service life.
- 3 **Manifolds** are of high tensile strength chrome-plated brass or 316 stainless steel for special corrosion resistance.
- 4 100% wet **cup/seal** design adds to service life by allowing pumped liquids to cool and lubricate the elastomers on both sides.
- 5 304 stainless steel **valves, seats, and springs** provide corrosion-resistance, ultimate seating and extended life.
- 6 Mechanically actuated **inlet valves** provide strong lift and easy prime.



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